

## ABSTRACT OF THE DISCLOSURE

A polysilicon etching method capable of completely removing polysilicon residues left on the side walls of a protrusion covered with a polysilicon layer after the polysilicon layer is patterned while form anisotropy of

5 the polysilicon layer is retained and the underlying insulating film is left unetched. After a polysilicon layer is deposited over one principal surface of a substrate, covering a protrusion, a resist layer is formed on the polysilicon layer over the protrusion. By using the resist layer as a mask, a plasma etching process is performed to pattern the polysilicon layer and form a gate electrode polysilicon

10 layer. At a first step, the polysilicon layer is etched by using HBr and  $\text{Cl}_2$  until polysilicon spacer residues appear on the side walls of the protrusion, and at a second step the polysilicon residues are removed by using HBr at a pressure of 5 to 10 mTorr.